

Product Brief

FocalPoint 10G/40G Ethernet Switch Reference Design

Barcelona is a complete single-board reference design, and can be used to rapidly and exhaustively evaluate the performance and flexibility of the FocalPoint FM6364 switch / router silicon, either in a test environment or a live datacenter network. The platform contains 48 SFP+ interfaces plus 4 QSFP interfaces in a 1U rack-mountable chassis, and can be ordered with software installed and ready to run.

The Barcelona Reference Design contains a Freescale MPC8536 control processor, which can be used to program the platform for a variety of configurations, and provide health and activity information as requested. The platform also contains Fulcrum's TestPoint™ software, which operates on Linux 2.6 embedded operating system.

Barcelona includes Fulcrum's VantagePoint™ advanced congestion notification and adaptive routing framework, implemented in an FPGA, which can be leveraged and enhanced to offload tasks or add proprietary features.



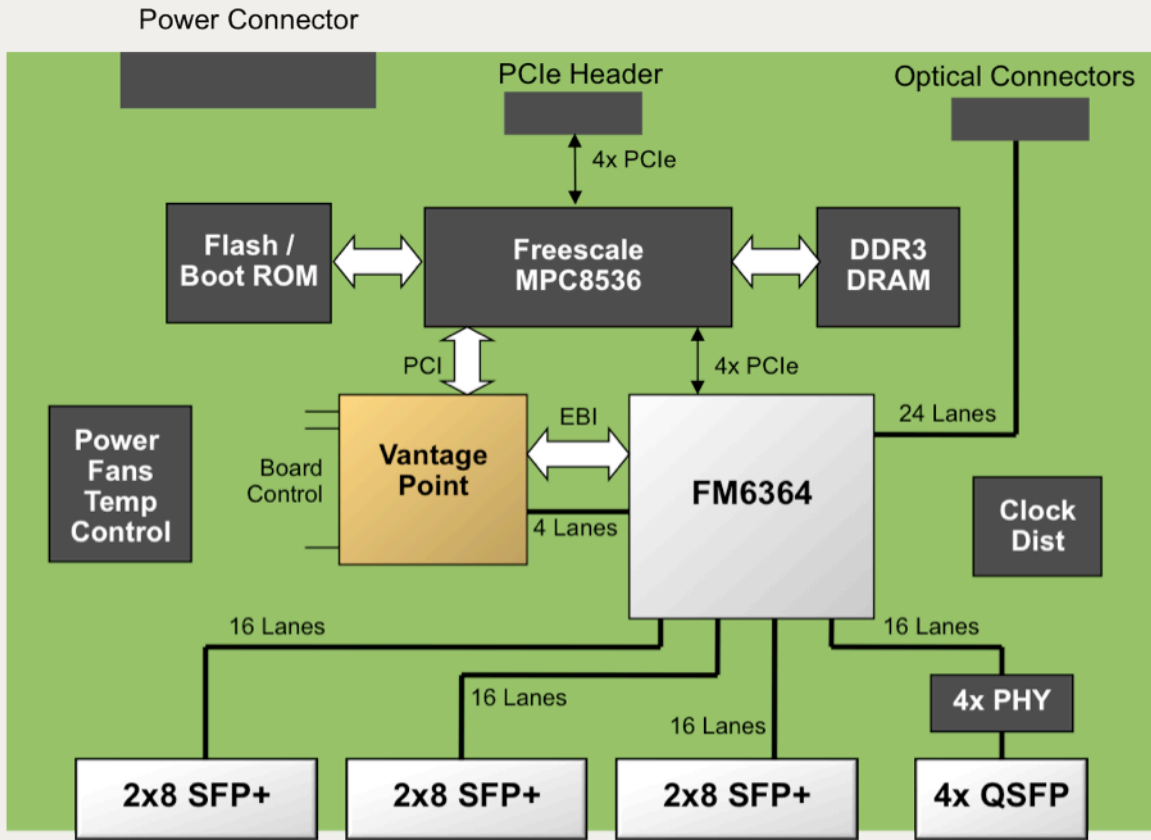
Reference Design Features

- **Fulcrum FM6364 switch chip**
- **Freescale MPC8536 control processor**
- **DDR3 200-pin SODIMM socket**
 - Unit is shipped with 1GB of DDR3
- **64MB of BOOT ROM (NOR FLASH)**
- **CompactFlash socket**
 - Unit is shipped with 1GB of Compact FLASH
- **FPGA with VantagePoint CM Framework**
 - Xilinx Spartan-6 XC6S45T-FF484
- **Small FPGA for board management**
- **One console interface for management**
 - Via external RJ45 RS232 interface
- **One Ethernet 10/100/1G BaseT interface for management**
- **Synchronous Ethernet support**
 - Internal sync
 - External sync in/out
- **Dual hot-swappable 450W power supplies**
 - Unit can run on single supply
- **Removable fan tray**

Flexible Programming Options

- **Multiple connectivity options** are supported, including a terminal directly attached to a console port, via a TELNET session, or over a network via an Ethernet "BaseT" interface.
- **Embedded operating system**, Linux 2.6, loaded on a Compact Flash card offers users broad flexibility in tools, development platforms, available software modules, and code reuse.
- **TestPoint**, Fulcrum's proprietary configuration scripting tool, automates production test and static configuration of FocalPoint devices in embedded applications, using simple PERL scripts.
- **Intelligent API and Drivers** provide a sophisticated abstraction layer for interfacing to TestPoint software, as well as other applications, and provide a consistent view of all FocalPoint devices -- regardless of port configuration and supported features.
- **Test proprietary features.** Leverage the embedded FPGA to implement proprietary features such as advanced congestion management or load balancing.

Barcelona Block Diagram



The Barcelona platform is a complete system reference design that contains dual load sharing power supplies, a 12 VDC power input, and a highly-integrated single-board design that, combined, provides multiple high-bandwidth Ethernet ports in a compact 1U rack-mountable form factor. LED indicators and front-panel control ports provide visibility into the status of, and management control over, the system.

Reference Design Components

The Barcelona Reference Design is available for ordering as follows:

- **Platform with SFP+ and QSFP interfaces Barcelona-01 (FM6364)**
1G/10G/40G Ethernet switch reference design housed in a 1U 19" rack-mountable chassis that contains 48 SFP+ interfaces and 4 QSFP interfaces.

Note: The Barcelona platform ships from the factory with TestPoint software installed.

Dimensions and Power

- System: 17.2" (w) x 25" (d)
- Main board: 16.7" (w) x 12" (d)
- Power: Dual load sharing 450W power supplies
- Power Input: 90VAC – 230VAC
- Fans: Six fans capable of 35 CFM each



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